

1. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{1950}{10}} + \sqrt{182}i$$

- A. Not a Complex Number
- B. Nonreal Complex
- C. Rational
- D. Pure Imaginary
- E. Irrational

2. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{21}{0}}$$

- A. Rational
- B. Irrational
- C. Not a Real number
- D. Integer
- E. Whole

3. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{484}{169}}$$

- A. Rational
- B. Not a Real number
- C. Irrational
- D. Integer
- E. Whole

4. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$\frac{27 - 22i}{-1 - 7i}$$

- A.  $a \in [-27.5, -26.5]$  and  $b \in [2.5, 4]$
- B.  $a \in [-4.5, -3]$  and  $b \in [-4, -3]$
- C.  $a \in [1, 3.5]$  and  $b \in [4, 5.5]$
- D.  $a \in [126.5, 128.5]$  and  $b \in [4, 5.5]$
- E.  $a \in [1, 3.5]$  and  $b \in [210.5, 211.5]$

5. Simplify the expression below and choose the interval the simplification is contained within.

$$11 - 16^2 + 12 \div 14 * 7 \div 4$$

- A.  $[268.3, 269.8]$
- B.  $[264.2, 267.3]$
- C.  $[-243.8, -241.2]$
- D.  $[-246.8, -244.4]$
- E. None of the above

6. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$\frac{-27 - 55i}{4 + i}$$

- A.  $a \in [-11, -9]$  and  $b \in [-194, -191]$
- B.  $a \in [-11, -9]$  and  $b \in [-12, -10.5]$
- C.  $a \in [-3.5, -2]$  and  $b \in [-16.5, -14]$

D.  $a \in [-163.5, -162.5]$  and  $b \in [-12, -10.5]$

E.  $a \in [-7, -6]$  and  $b \in [-56, -54]$

7. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{64}{625}} + 64i^2$$

- A. Irrational
- B. Pure Imaginary
- C. Nonreal Complex
- D. Not a Complex Number
- E. Rational

8. Simplify the expression below and choose the interval the simplification is contained within.

$$3 - 10^2 + 1 \div 20 * 15 \div 18$$

- A.  $[103.02, 103.06]$
- B.  $[102.99, 103.01]$
- C.  $[-96.98, -96.94]$
- D.  $[-97.01, -96.99]$
- E. None of the above

9. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$(8 - 10i)(6 - 5i)$$

- A.  $a \in [-2, 1]$  and  $b \in [94, 105]$
- B.  $a \in [95, 100]$  and  $b \in [20, 22]$

- C.  $a \in [-2, 1]$  and  $b \in [-102, -98]$
  - D.  $a \in [95, 100]$  and  $b \in [-23, -14]$
  - E.  $a \in [46, 49]$  and  $b \in [45, 53]$
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10. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$(-2 + 10i)(-9 + 6i)$$

- A.  $a \in [-44, -38]$  and  $b \in [-105, -101]$
  - B.  $a \in [-44, -38]$  and  $b \in [99, 103]$
  - C.  $a \in [16, 25]$  and  $b \in [58, 61]$
  - D.  $a \in [78, 84]$  and  $b \in [-84, -75]$
  - E.  $a \in [78, 84]$  and  $b \in [78, 83]$
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